Revision Number: 003.1 **Issue date:** 12/27/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **BONDERITE M-CR 407 R CHROMATE COATING known as ALODINE 407R**
IDH number: 594843
Product type: Conversion coating
Region: United States

Company address:
Henkel Corporation
32100 Stephenson Highway
Madison Heights, MI 48071

Contact information:
Telephone: 248.583.9300
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state:	Liquid	**HEALTH:**	*3
Color:	Red	**FLAMMABILITY:**	0
Odor:	Acidic	**PHYSICAL HAZARD:**	1
		Personal Protection:	See MSDS Section 8

DANGER–CORROSIVE!: CAUSES EYE, SKIN AND RESPIRATORY TRACT BURNS.
MAY CAUSE BLINDNESS.
MAY CAUSE ALLERGIC SKIN REACTION.
CONTAINS MATERIAL WHICH CAN CAUSE CANCER.
MAY BE HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: Mists, vapors or liquid may cause severe irritation or burns. Contains fluorides. Exposure to fluorides over years may cause fluorosis.

Skin contact: Contact with broken skin may lead to formation of firmly marginated "chrome sores". Product contains chromium, which may cause an allergic skin sensitization reaction. Massive overexposures may lead to kidney failure and death. Following skin exposure to this product, the sensation of irritation or pain may be delayed.

Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

Ingestion: This product may produce corrosive damage to the gastrointestinal tract if it is swallowed. Ingestion of small amounts of this product may result in potentially fatal hypocalcemia and systemic toxicity. Ingestion of large amounts of this product may result in fluoride poisoning including symptoms of calcification of the ligaments and severe bone changes making normal movements painful, mottling of the teeth, pulmonary fibrosis, anemia, anorexia, dental effects, and possibly death. Ingestion of large amounts of this product may result in fluoride poisoning including symptoms of calcification of the ligaments and severe bone changes making normal movements painful, mottling of the teeth, pulmonary fibrosis, anemia, anorexia, dental effects, and possibly death.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders. Preexisting cardiovascular or bone marrow diseases.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Phosphoric acid	7664-38-2	10 - 30
Chromic acid	7738-94-5	10 - 30
Hydrogen fluoride	7664-39-3	1 - 5

4. FIRST AID MEASURES

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist. If inhaled, immediately remove the affected person to fresh air.

Skin contact: Rinse with large amounts of running water. GET MEDICAL ATTENTION IMMEDIATELY! If iced 0.13% benzalkonium chloride (Zephiran) solution or 2.5% calcium gluconate gel are available, the rinsing may be limited to 5 minutes, with the soaks or gel applied as soon as the rinsing is stopped. If benzalkonium chloride or calcium gluconate gel is not available, rinsing must continue until medical treatment is provided.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Notes to physician: Ocular exposure to corrosive fluoride compounds has been treated with isotonic sodium chloride or magnesium chloride. Dermal exposure to corrosive fluoride compounds has been treated with calcium gluconate or calcium carbonate gel applied topically to the affected areas to relieve pain at the site of exposure.Treatment of hypocalcemia associated with corrosive fluoride compounds exposure may be corrected by intravenous calcium gluconate or calcium chloride. Treatment of hypomagnesemia may be corrected by intravenous magnesium sulfate.

5. FIRE FIGHTING MEASURES

Flash point: Not applicable

Autoignition temperature: Not applicable

Flammable/Explosive limits - lower: Not applicable

Flammable/Explosive limits - upper: Not applicable

Extinguishing media: Use media appropriate for surrounding material.

Special firefighting procedures: Wear full protective clothing. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards: This product is an aqueous mixture which will not burn.

Hazardous combustion products: Flammable and explosive hydrogen gas may be formed when hydrofluoric acid reacts with certain metals. Hydrogen fluoride gas may evolve when chemical is subjected to prolonged high temperature.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Wear appropriate personal protective equipment. Do not allow product to enter sewer or waterways.

Clean-up methods: Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Do not breathe gas/fumes/vapor/spray. Wash thoroughly after handling. For industrial use only. IN CASE OF CONTACT OR SUSPICION OF CONTACT, PROMPT MEDICAL ATTENTION IS ABSOLUTELY NECESSARY.

Storage: Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Thaw and mix thoroughly if frozen.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Phosphoric acid	1 mg/m3 TWA 3 mg/m3 STEL	1 mg/m3 TWA	None	None
Chromic acid	0.05 mg/m3 TWA (as Cr)	0.1 mg/m3 Ceiling 0.005 mg/m3 TWA (SKIN) 0.0025 mg/m3 OSHA ACT 29 CFR 1910.1026	None	None
Hydrogen fluoride	(SKIN) (as F) 0.5 ppm TWA (as F) 2 ppm Ceiling (as F)	3 ppm TWA	None	None

Engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles; face shield (if splashing is possible).

Skin protection: Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended. Recommended gloves include butyl rubber and neoprene.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Red
Odor: Acidic
Odor threshold: Not available.
pH: 1
Vapor pressure: Not determined
Boiling point/range: > 100 °C (> 212°F) calculated
Melting point/ range: -20 °F (-28.9 °C)
Specific gravity: 1.20 - 1.23
Vapor density: Not determined
Flash point: Not applicable
Flammable/Explosive limits - lower: Not applicable
Flammable/Explosive limits - upper: Not applicable
Autoignition temperature: Not applicable

Evaporation rate: Not available.
Solubility in water: Complete
Partition coefficient (n-octanol/water): Not determined
VOC content: Not applicable

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Hazardous reactions: Will not occur.

Hazardous decomposition products: May liberate hydrogen fluoride.

Incompatible materials: Reacts with cyanides and sulfides to cause the release of poisonous gases. This material will react with glass, concrete, certain metals, silica containing materials, rubber, leather, and many organics. Avoid contact with organic materials, oils, greases, and any oxidizable materials. This product may react with strong alkalies.

Conditions to avoid: None identified.

11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Phosphoric acid	No	No	No
Chromic acid	Known To Be Human Carcinogen.	Group 1	Yes
Hydrogen fluoride	No	No	No

Hazardous components	Health Effects/Target Organs
Phosphoric acid	Irritant, Corrosive
Chromic acid	Allergen, Blood, Carcinogen, Central nervous system, Corrosive, Developmental, Eyes, Gastrointestinal, Irritant, Kidney, Liver, Mutagen, Reproductive, Respiratory
Hydrogen fluoride	Allergen, Blood, Bone Marrow, Cardiac, Central nervous system, Corrosive, Irritant, Kidney, Liver, Lung, Muscle, Nervous System, Respiratory, Teeth

12. ECOLOGICAL INFORMATION

Ecological information: No data available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: This product, if discarded directly, would be a characteristic RCRA corrosive waste (D002). This product contains chromium which is a hazardous waste (D007). This product contains a component or components identified as hazardous under 40 CFR 261.24. U134: Hydrogen fluoride

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Corrosive liquids, toxic, n.o.s. (Hydrofluoric acid, Phosphoric acid)
Hazard class or division: 8 (6.1)
Identification number: UN 2922
Packing group: II
DOT Reportable quantity: Chromic acid, Hydrofluoric acid

International Air Transportation (ICAO/IATA)

Proper shipping name:	Corrosive liquid, toxic, n.o.s. (Hydrofluoric acid, Phosphoric acid)
Hazard class or division:	8 (6.1)
Identification number:	UN 2922
Packing group:	II

Water Transportation (IMO/IMDG)

Proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric acid, Phosphoric acid)
Hazard class or division:	8 (6.1)
Identification number:	UN 2922
Packing group:	II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification:	Chromic acid (CAS# 7738-94-5).
CERCLA/SARA Section 302 EHS:	Hydrogen fluoride (CAS# 7664-39-3).
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health, Reactive
CERCLA/SARA 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Chromic acid (CAS# 7738-94-5). Hydrogen fluoride (CAS# 7664-39-3).
CERCLA Reportable quantity:	Phosphoric acid (CAS# 7664-38-2) 5,000 lbs. (2,270 kg) Chromic acid (CAS# 7738-94-5) 10 lbs. (4.54 kg) Hydrogen fluoride (CAS# 7664-39-3) 100 lbs. (45.4 kg)
California Proposition 65:	This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.
WHMIS hazard class:	D.1.B, D.2.B, D.2.A, E

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Regulatory Affairs

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